Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

REV 15e

CENTRAL MACHINERY®

16 TON HYDRAULIC PIPE BENDER

Visit our website at: http://www.harborfreight.com
Email our technical support at: productsupport@harborfreight.com

ITEM 35336

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.
Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠WARNING

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

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SAFETY

SETUP

OPERATION

MAINTENANCE

WARNING SYMBOLS AND DEFINITIONS	
⚠	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
⚠DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE CAUTION	Addresses practices not related to personal injury.

IMPORTANT SAFETY INFORMATION

⚠WARNING

Read all safety warnings and all instructions.
Failure to heed these markings may result in personal injury and/or property damage.

1. Attach pipe bender securely to solid, flat and level surface that can support weight of pipe bender and pipe, with enough clearance for movement of pipe. Do not lay pipe bender on its side. The hydraulic ram may leak or not function properly.
2. Keep hands away from ram, pipe and rollers during use.
3. **To prevent injury from burns, do not apply heat to pipe.**
4. Use only on free standing pipe. Do not use on pipe that is part of an assembly or that is installed into a structure.
5. Study, understand, and follow all instructions before operating this device.
6. Keep rollers clean. If pipe rests on obstruction, it creates an uneven surface, causing excess stress and possible breakage.
7. Do not use on painted pipe or pipe that has debris on it.
8. STOP and release compression if you suspect imminent structural failure. If safe, inspect thoroughly and reposition pipe before proceeding.
9. Wear ANSI-approved safety goggles, heavy-duty work gloves, and steel-toe work boots during set up and/or use.
10. Keep bystanders out of work area.
11. Do not leave the pipe bender unattended when loaded.
12. Do not adjust safety valve.
13. Inspect before every use; do not use if parts are loose, damaged.
14. Ram service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury.
15. When servicing a ram, use only identical replacement parts. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of injury.
16. No alterations shall be made to this product.
17. Only use with accessories rated to handle the forces exerted by this tool during operation. Other accessories not designed for the forces generated may break and forcefully launch pieces.

18. Use only with included ram.

19. Industrial applications must follow OSHA requirements.

20. This product is not a toy. Keep it out of reach of children.

21. Maintain labels and nameplates. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

22. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

23. WARNING: The brass components of this product contain lead, a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)

24. WARNING: This product contains di (2-ethylhexyl) phthalate (DEHP), a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)

IMPORTANT! Before first use:

Check hydraulic fluid level and fill to 1/4″ below the fill port as needed - see instructions on page 5. Thoroughly test the Ram for proper operation. If it does not work properly, bleed air from its hydraulic system - see instructions on page 5.

SAVE THESE INSTRUCTIONS.

Specifications

Maximum Capacity	16 Tons (32,000 lb)
Pipe Type	Schedule 40 or 80 malleable steel pipe

Setup - Before Use:

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Note: For additional information regarding the parts listed in the following pages, refer to *Parts List and Assembly Diagram on page 10*.

Functions

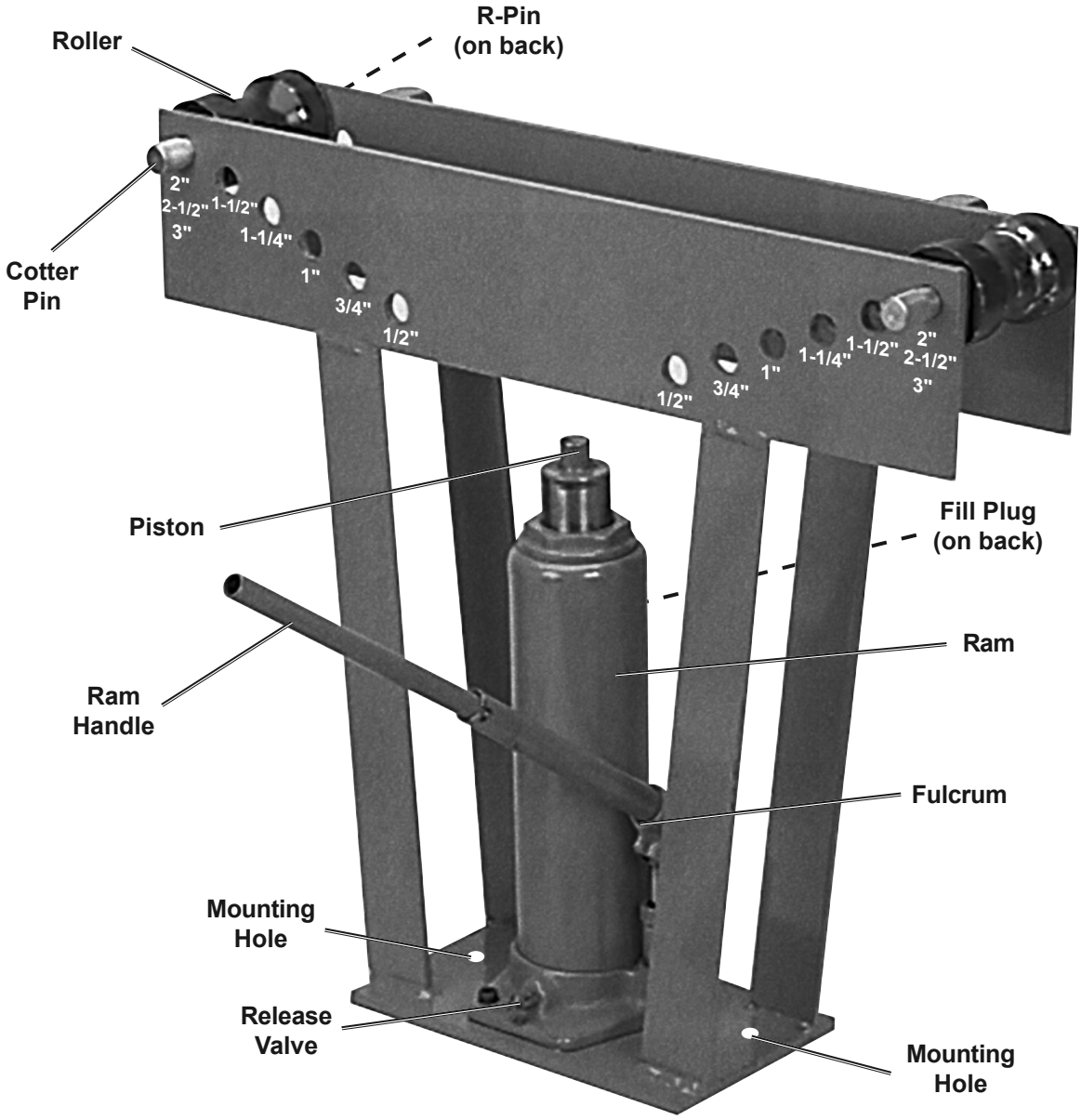


Figure A

Mounting

WARNING! Attach Pipe Bender securely to solid and level surface that can support weight of Pipe Bender and pipe, with enough clearance for movement of pipe. Do not lay pipe bender on its side. The hydraulic ram may leak and not function properly.

Note: Verify that mounting surface has no hidden components before drilling or driving bolts.

1. Use base to mark mounting holes on mounting surface.
2. Mount base to mounting surface using appropriate hardware.

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Bleeding the Ram

BEFORE EACH USE OR IF RAM PERFORMANCE DECREASES,
check for excessive air and proper hydraulic fluid level in Ram. If Ram appears not to be working properly, it may be necessary to purge its hydraulic system of excessive air as follows:

1. Remove Fill Plug.
2. Place Ram Handle over Release Valve.
3. Twist Handle *counterclockwise* to open the Valve.
4. Insert Handle into Fulcrum, then pump Handle quickly several times.
5. Check fluid level and, if necessary, top off according to **Adding Hydraulic Fluid** below.
6. Place Ram Handle over Release Valve.
7. Twist the Handle *clockwise* to close Valve.
8. Replace Fill Plug.

IMPORTANT: After bleeding the Ram, test the Ram for proper operation prior to its actual use.

9. If, after bleeding, the Ram does not appear to be working properly, do not use it until repaired by a qualified service technician.

Adding Hydraulic Fluid

1. Remove Fill Plug.
2. Add high grade hydraulic fluid (sold separately) slowly until the fluid reaches 1/4″ below the top of the Fill Port.
3. Replace Fill Plug.

Bending Pipe

***NOTICE*:** A certain amount of deformation will occur when using this Pipe Bender. Choosing the right pipe will reduce deformation. **Use only ANSI Schedule 40 or 80 malleable steel pipe.**

Note: To further reduce deformation, internal support may be provided by:

a. Using mandrels. Follow mandrel manufacturer's directions.

b. Packing pipe with clean sand, then capping off ends with steel caps (sold separately) before bending.

WARNING! To prevent injury from burns, do not apply heat to pipe.

NPS (Nominal Pipe Size) (inches)	Pipe OD (Outside Diameter) (inches)
1/2	0.840
3/4	1.050
1	1.315
1-1/4	1.660
1-1/2	1.900
2	2.375
2-1/2"	2.88
3"	3.50

Figure B

Note: Practice on scrap workpieces until familiar with Pipe Bender's capabilities.

1. Choose Bending Die the same nominal pipe size as pipe. **For example: Use 1/2" Bending Die with the size marked on it with 1/2" NPS pipe.**

Note: Outside pipe diameters are larger than the pipe size. **See Figure B.**

2. Attach Bending Die to Piston.

3. Adjust Rollers to correspond with size of Bending Die:

   a. Remove R-Pins from Cotter Pins, then remove Cotter Pins.

   b. Move Rollers to proper positions, then replace Cotter Pins and R-Pins.

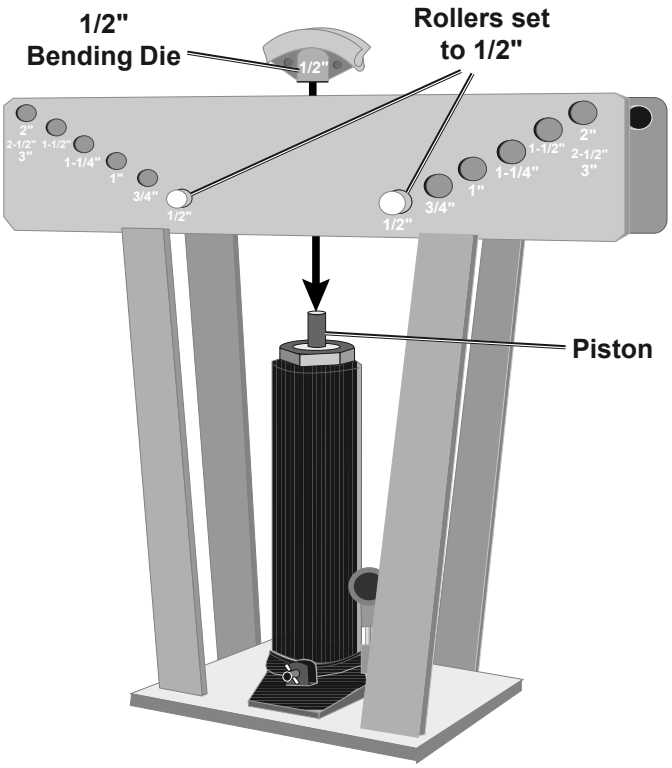


Figure C

4. Mark center line of bend on pipe.

5. Slide pipe into Bending Die, lining up center line marked on pipe with center of Bending Die.

Note: Use only with pipe that fits the bending die exactly. **Pipe will deform significantly if it does not fit the Bending Die exactly.**

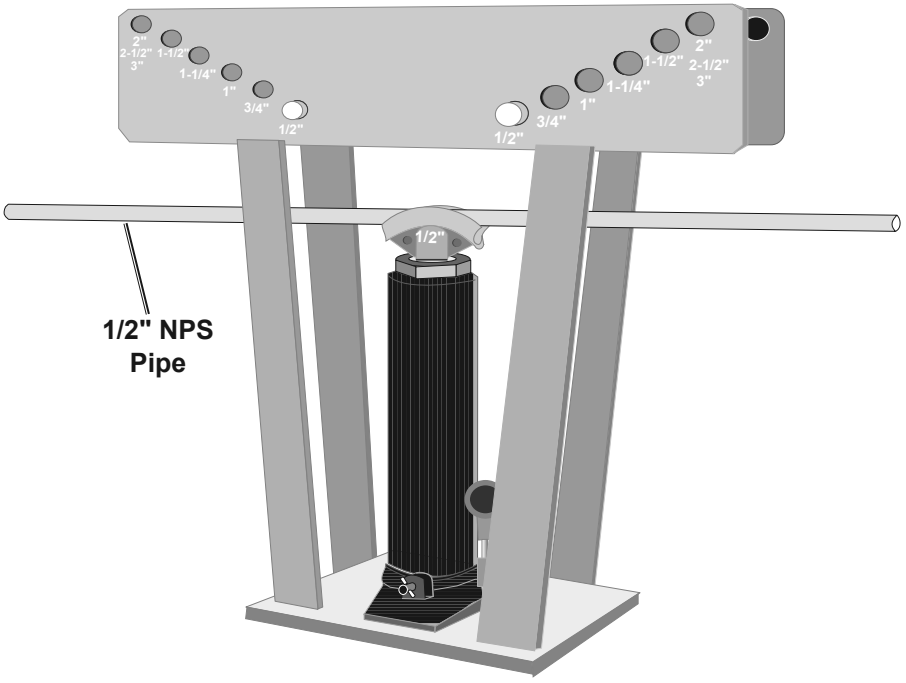


Figure D

6. Place Ram Handle over Release Valve.

7. Twist Handle *clockwise* to close Valve.

8. Insert Handle into Fulcrum, then pump Handle until pipe reaches Bending Die.

9. Continue pumping **slowly** until desired angle is reached. Keep in mind that pipe may rebound slightly, so you may need to bend very slightly beyond your desired bend to get the correct bend. Practice on scrap workpieces first.

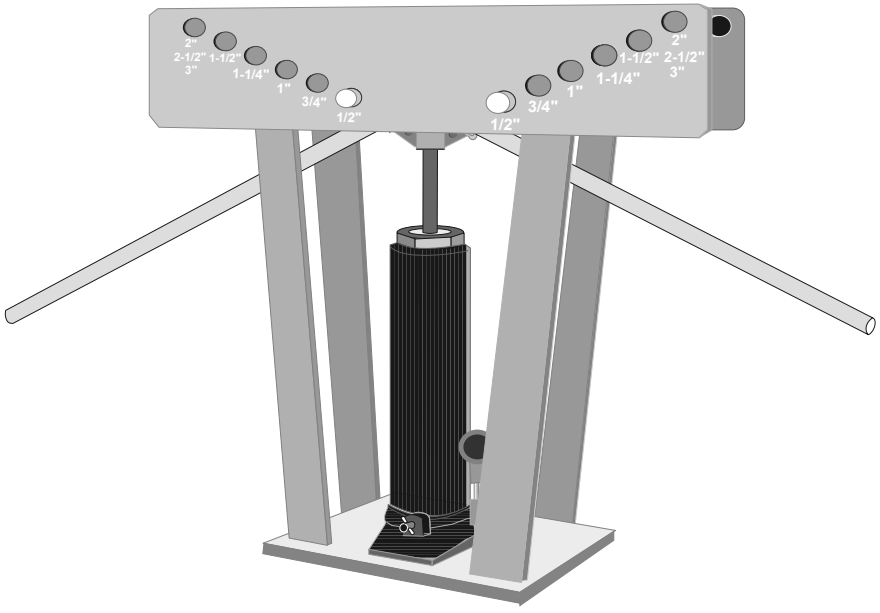


Figure E

10. Place Ram Handle over Release Valve.

11. Twist Handle *counterclockwise* to open the Valve and lower the piston.

12. Remove pipe. If necessary, remove Roller(s) to allow room to remove pipe.

13. After use, store indoors out of reach of children.

User-Maintenance Instructions

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:
Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

1. **BEFORE EACH USE,** inspect the general condition of the Pipe Bender and Ram. Check for:
   - loose hardware,
   - misalignment or binding of moving parts,
   - cracked or broken parts,
   - any condition that may affect its safe operation.

   If a problem occurs, have the problem corrected before further use.
   Do not use damaged equipment.
2. **BEFORE EACH USE,** thoroughly test the Ram for proper operation prior to its actual use.
   If the Ram appears not to be working properly, follow Bleeding instructions on page 5.
3. **AT LEAST ONCE EVERY THREE YEARS,** change the hydraulic fluid:
   a. Remove Ram from Pipe Bender by removing two Bolts (3).
   b. With the Ram fully lowered, remove the Fill Plug.
   c. Tip the Ram over to allow the old hydraulic fluid to drain out completely. Dispose of the old hydraulic fluid in accordance with local regulations.
   d. With the Ram upright, completely fill the Hydraulic Unit with high grade hydraulic fluid until the fluid is 1/4″ below the top of the Fill Port.
   e. Turn the Release Knob *counterclockwise* to open the Release Valve.
   f. Pump the Handle up and down quickly several times to purge air from the system.
   g. Recheck fluid level and re-fill as needed.
   h. Replace the Fill Plug.
   i. Replace Ram on Pipe Bender.
4. **AFTER EACH USE,** wipe with a clean cloth. Store indoors out of children's reach.

Troubleshooting

⚠WARNING

TO PREVENT SERIOUS INJURY:
Use caution when troubleshooting a malfunctioning ram.
Completely resolve all problems before use. If the solutions presented in the Troubleshooting guide do not solve the problem, have a qualified technician inspect and repair the ram before use.

After the ram is repaired: Test it carefully without a load by raising it and lowering it fully, checking for proper operation, BEFORE RETURNING THE RAM TO OPERATION.

DO NOT USE A DAMAGED OR MALFUNCTIONING RAM!

POSSIBLE SYMPTOMS				PROBABLE SOLUTION (Make certain that the Ram is not supporting a load while attempting a solution.)
Pump stroke feels spongy	Piston will not lift all the way	Handle moves up when ram is under load	Fluid leaking from filler plug	
	X			Check that Release Valve is closed fully.
		X		Valves may be blocked and may not close fully. To flush the valves: 1. Lower the piston and securely close the Release Valve. 2. Manually lift the piston several inches. 3. Open the release valve and force the piston down as quickly as possible.
X	X			Ram may be low on fluid. Check the fluid level and refill if needed.
				Ram may require bleeding - see instructions on page 5.
			X	Unit may have too much hydraulic fluid inside, check fluid level and adjust if needed.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Parts List

Part	Description	Qty
1	Frame	1
2	Ram	1
3	Hex Bolt	2
4	Cotter Pin	2
5	Roller	2
6	R-Pin	2
7	1/2" Bending Die	1
8	3/4" Bending Die	1

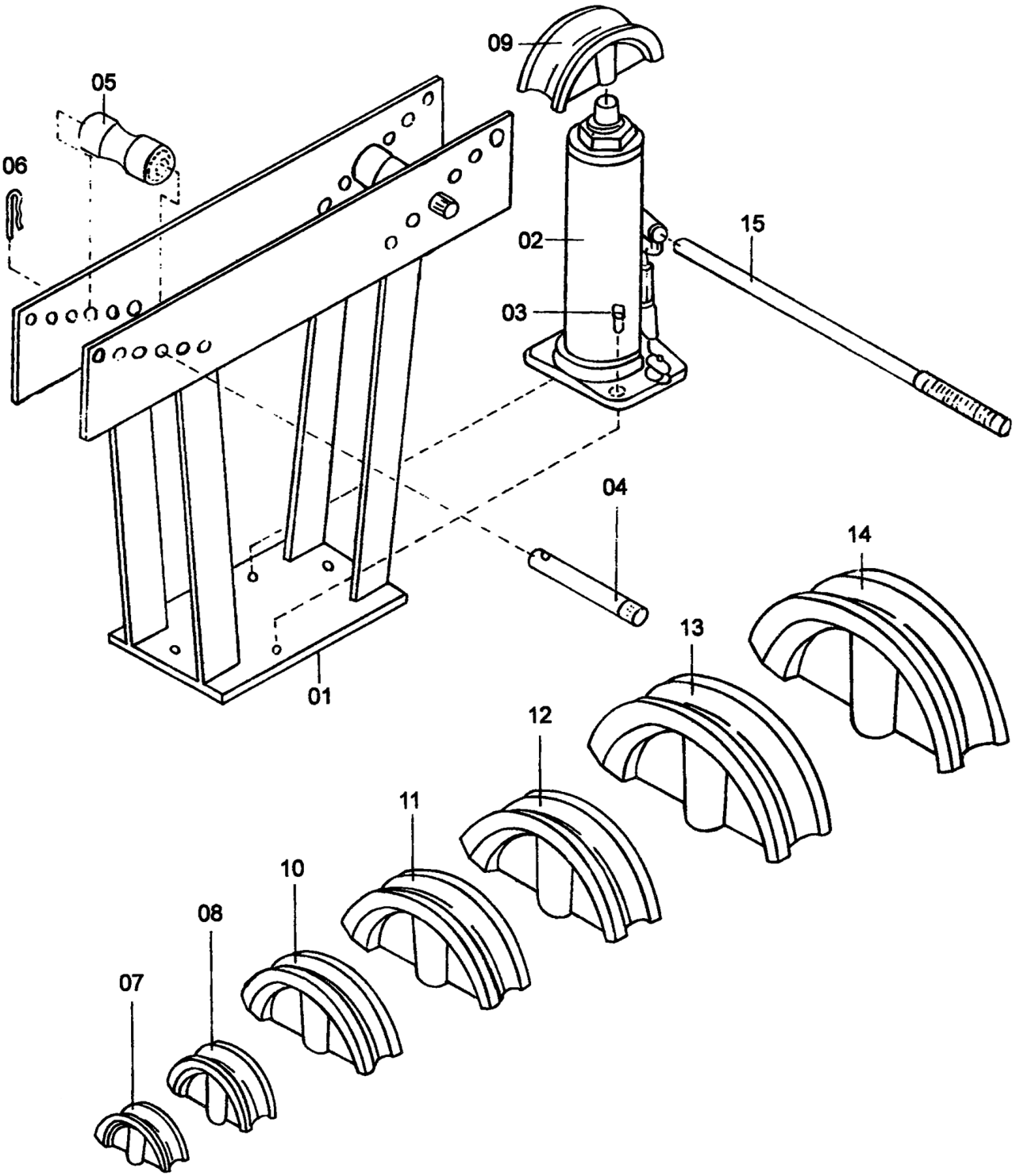
Part	Description	Qty
9	1" Bending Die	1
10	1-1/4" Bending Die	1
11	1-1/2" Bending Die	1
12	2" Bending Die	1
13	2-1/2" Bending Die	1
14	3" Bending Die	1
15	Ram Handle	1

Record Product's Serial Number Here:_____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

Assembly Diagram



Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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